



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.    | CONFIRMATION NO. |
|--|-------------|----------------------|------------------------|------------------|
| 10/828,814   | 04/21/2004  | Joerg Schottek       | 1094-54N               | 7274             |
| 28249 7590 02/09/2007<br>DILWORTH & BARRESE, LLP<br>333 EARLE OVINGTON BLVD.<br>SUITE 702<br>UNIONDALE, NY 11553 |             |                      | EXAMINER<br>LEE, RIP A |                  |
|  |             |                      | ART UNIT               | PAPER NUMBER     |
|  |             |                      | 1713                   |                  |
| SHORTENED STATUTORY PERIOD OF RESPONSE   |             | MAIL DATE            | DELIVERY MODE          |                  |
| 2 MONTHS   |             | 02/09/2007           | PAPER                  |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/828,814

Applicant(s)

SCHOTTEK ET AL.

Examiner

Rip A. Lee

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on November 17, 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 and 30-72 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-28 and 30-72 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

This office action follows a request for continued examination (RCE) under 37 § C.F.R. 1.114, filed on November 17, 2006. Claims 1-28 and 30-72 are pending.

1. This application is in condition for allowance except for the following formal matters:

See required corrections of matters of form, listed below.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Please correct the following claims accordingly:

- |                                |  |
|--------------------------------|--|
| Claim 3, line 2 <sup>a</sup>   | replace "hydrocarbon" with "alkyl" (two occurrences) |
| Claim 4, line 6                | replace "cyclo-pentyl" with "cyclopentyl"            |
| Claim 5, line 3                | delete "cyclopentadienyl"                            |
| Claim 9, line 7                | delete "or" which appears after "40 carbon atoms"    |
| Claim 12, line 2 <sup>a</sup>  | replace "hydrocarbon" with "alkyl"                   |
| Claim 12, line 3 <sup>a</sup>  | replace "hydrocarbon" with "alkyl"                   |
| Claim 13, line 5               | replace "which is" with "and are"                    |
| Claim 13, line 6               | delete "also"  |
| Claim 13, line 7               | delete "also"  |
| Claim 14, line 3               | delete "cyclopentadienyl"                            |
| Claim 15, line 10 <sup>b</sup> | replace "from 6 to about 40" with "from 6 to 20"     |
| Claim 17, line 12              | replace "about 40" with "20"                         |

Art Unit: 1713

|                                |  |
|--------------------------------|--|
| Claim 18, line 2 <sup>a</sup>  | replace "hydrocarbon" with "alkyl"               |
| Claim 18, line 3 <sup>a</sup>  | replace "hydrocarbon" with "alkyl"               |
| Claim 19, line 15              | replace "cyclo-pentyl" with "cyclopentyl"        |
| Claim 21, line 3               | delete "cyclopentadienyl"                        |
| Claim 21, line 3 <sup>c</sup>  | delete "methyl, ethyl,"                          |
| Claim 23, line 7 <sup>d</sup>  | delete "and cyclic or branched in the $\alpha$ " |
| Claim 23, line 8 <sup>d</sup>  | delete "position"                                |
| Claim 23, line 11              | replace "20" with "10"                           |
| Claim 24, line 2 <sup>a</sup>  | replace "hydrocarbon" with "alkyl"               |
| Claim 24, line 3 <sup>a</sup>  | replace "hydrocarbon" with "alkyl"               |
| Claim 25, line 4 <sup>e</sup>  | delete "iso-butyl"                               |
| Claim 25, line 11              | delete the period " ." after the term "tert"     |
| Claim 25, line 13 <sup>f</sup> | correct the term "(trisfluor)trimethyl"          |
| Claim 25, line 15              | replace "cyclo-pentyl" with "cyclopentyl"        |
| Claim 25, line 16              | replace "cyclo-hexyl" with "cyclohexyl"          |
| Claim 26, line 3               | delete "cyclopentadienyl"                        |
| Claim 26, line 3 <sup>c</sup>  | delete "methyl, ethyl,"                          |

Art Unit: 1713

The following refer to claim 27

|                  |   |
|------------------|---|
| page 12, line 5  | replace the period “ . ” after “tert” with a hyphen “ - ” (two occurrences) |
| page 12, line 7  | replace the period “ . ” after “tert” with a hyphen “ - ” (two occurrences) |
| page 12, line 9  | replace the period “ . ” after “tert” with a hyphen “ - ” (two occurrences) |
| page 12, line 11 | replace the period “ . ” after “tert” with a hyphen “ - ” (two occurrences) |
| page 13, line 1  | replace the period “ . ” after “sec” with a hyphen “ - ”                    |
| page 13, line 11 | replace the period “ . ” after “tert” with a hyphen “ - ”                   |
| page 13, line 13 | replace the period “ . ” after “tert” with a hyphen “ - ”                   |
| page 13, line 15 | replace the period “ . ” after “tert” with a hyphen “ - ”                   |
| page 13, line 17 | replace the period “ . ” after “tert” with a hyphen “ - ”                   |
| page 13, line 19 | replace the period “ . ” after “tert” with a hyphen “ - ”                   |
| page 13, line 21 | replace the period “ . ” after “tert” with a hyphen “ - ”                   |
| page 13, line 23 | replace the period “ . ” after “tert” with a hyphen “ - ”                   |
| page 13, line 25 | replace the period “ . ” after “tert” with a hyphen “ - ”                   |
| page 13, line 27 | replace the period “ . ” after “tert” with a hyphen “ - ”                   |
| page 13, line 29 | replace the period “ . ” after “tert” with a hyphen “ - ”                   |
| page 16, line 1  | delete the period “ . ” after the term “tert”                               |
| page 16, line 2  | delete the period “ . ” after the term “tert”                               |
| page 16, line 3  | delete the period “ . ” after the term “tert”                               |
| page 16, line 4  | delete the period “ . ” after the term “tert”                               |
| page 16, line 19 | delete the period “ . ” after the term “tert”                               |

Art Unit: 1713

|                  |  |
|------------------|--|
| page 16, line 28 | delete the period “.” after the term “tert”              |
| page 17, line 7  | delete the period “.” after the term “tert”              |
| page 17, line 17 | delete the period “.” after the term “tert”              |
| page 17, line 18 | delete the period “.” after the term “tert”              |
| page 17, line 19 | delete the period “.” after the term “tert”              |
| page 17, line 20 | delete the period “.” after the term “tert”              |
| page 20, line 21 | replace the period “.” before “wherein” with a comma “,” |

---

|                  |  |
|------------------|--|
| claim 38, line 5 | replace “penta-fluoro” with “pentafluoro”                                      |
| claim 38, line 5 | replace “tris(tolyl)” with “tritoly”   |
| claim 41, line 4 | replace “ $\text{AL}_2(\text{SO}_4)_3$ ” with “ $\text{Al}_2(\text{SO}_4)_3$ ” |
| claim 41, line 4 | replace “ $\text{AL}(\text{NO}_3)_3$ ” with “ $\text{Al}(\text{NO}_3)_3$ ”     |
| claim 42, line 4 | replace “or” with “and”  |

---

**Claim 43**

|                               |  |
|-------------------------------|--|
| page 29, line 14 <sup>g</sup> | please qualify the definition that $\text{R}^{51}$ has the same meaning as $\text{R}^{17}$ |
| page 29, line 20              | replace “z + y” with “f + g”   |

|                                |  |
|--------------------------------|--|
| Claim 44, line 11 <sup>g</sup> | please qualify the definition that $\text{R}^{51}$ has the same meaning as $\text{R}^{17}$ |
|--------------------------------|--|

Footnotes

<sup>a</sup> The term “hydrocarbon” should be replaced with “alkyl” because the preceding claim indicates that R<sup>40</sup> and R<sup>41</sup> are selected from cyclic or non-cyclic alkyl groups

<sup>b</sup> Line 5 of the claim states that the aryl group contains from 6 to about 20 carbon atoms. Therefore, the unsubstituted aryl group can not contain 40 carbon atoms. Substituted aryl groups, however, can contain the recited 6 to about 40 carbon atoms. This language is consistent with other claims.

<sup>c</sup> The previous claim limits R<sup>40</sup> and R<sup>41</sup> to propyl, butyl, *etc.* Therefore, R<sup>41</sup> can not be methyl or ethyl.

<sup>d</sup> This phrase is redundant since the limitation has been set forth in a previous section of the same claim.

<sup>e</sup> The isobutyl group is not  $\alpha$ -branched.

<sup>f</sup> The errant term appears on page 16, line 28 of the specification. It appears that applicants meant to write “trifluoromethyl.”

<sup>g</sup> The current definition is cyclical. The claim states that R<sup>51</sup> has the same meaning as R<sup>17</sup> and that R<sup>17</sup> may also be a  $-\text{OSiR}^{51}_3$  group. Where R<sup>51</sup> is a  $-\text{OSiR}^{51}_3$  group, one finds that R<sup>51</sup> is never defined unequivocally.

***Allowable Subject Matter***

2. The following is a statement of reasons for the indication of allowable subject matter: The present invention is drawn to a composition comprising a mixture of racemic and meso isomers of metallocene compounds of the general formula  $R^9L^1L^2M^1R^1R^2$ , wherein the mixture of racemic and meso isomers has a weight ratio of racemic to meso isomers of greater than 5:1 *as synthesized*; see claim for full structural details. It is understood from the instant specification that the term “as synthesized” refers to the material isolated from the reaction mixture without any subsequent separation of isomers. As elucidated in prosecution, this includes fractional crystallization and extraction methods. The salient feature of metallocene compounds of general formula  $R^9L^1L^2M^1R^1R^2$  include: Structural bridge  $R^9$  contains substituents  $R^{40}$  and  $R^{41}$ . When  $R^{40}$  and  $R^{41}$  are the same, they include a cyclic or non-cyclic alkyl group having from 2 to about 30 carbon atoms, an alkenyl groups having from about 3 to about 10 carbon atoms, an alkylaryl or arylalkyl group of from 7 to about 40 carbon atoms. When  $R^{40}$  and  $R^{41}$  are different, either one of  $R^{40}$  and  $R^{41}$  includes a cyclic or non-cyclic alkyl group having from 4 to about 40 carbon atoms and the other  $R^{40}$  and  $R^{41}$  includes a cyclic or non-cyclic alkyl group having from 1 to about 40 carbon atoms. Notably, these definitions exclude metallocenes containing ubiquitous  $Me_2Si$ ,  $Ph_2Si$ , and  $(Me)(Ph)Si$  bridging groups.

The closest references cited to date are Yamazaki *et al.* (U.S. 6,184,402), Rix *et al.* (U.S. 6,960,676), Thiele *et al.* (U.S. 5,945,367), and Winter *et al.* (U.S. 6,365,763). While the references teach isomeric mixtures of metallocene compounds having structural features that satisfy the parameters set forth in the claims, none of the references discloses mixtures of racemic and meso isomers wherein the weight ratio of racemic to meso isomers of greater than 5:1 as synthesized. In all cases, a subsequent step is required to enrich the rac/meso ratio.



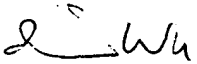
Art Unit: 1713

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

ral

February 6, 2007

  
DAVID W. WU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700